

Spring 1955

Editorially Speaking

WOMEN AND ENGINEERING

The recent Conclave decision to admit qualified women to full membership in Sigma Tau must seem an inevitable step in the right direction to anyone who has kept informed on female infiltration into the engineering field since World War II. Some of us, however, may be just a little bit disturbed by this petticoat invasion of what we have long thought was a distinctly masculine profession, ascribing the lowering of the sex barrier to gallantry, perhaps, rather than to any solid abilities or "know-how" which women might have in the many specialized branches of engineering. Men, we are in the habit of saying, excell in mechanical aptitude, while women shine in clerical work because they are conscientious, clever with their hands, careful of details, and not afraid to try something new. This kind of thinking is traditional; it is based on the assumption that woman is a "delicate vessel" that must be carefully protected, that her natural abilities set definite limits on her usefulness, that her emotional disposition makes her incapable of the detachment so typical of the true scientist or engineer. Just how well do these notions rooted in our yesterdays square with the facts of today? Just what can a highly technological society such as ours expect of those trail-blazing women who deliberately choose engineering as their calling? The answer, to use the vernacular, is: Plenty, brother, plenty!

The professionally trained engineer, it has been said, is expected to understand the principles governing the development of operation and design; he is equipped with both technical and theoretical knowledge. Nowadays most professional engineering assignments are accomplished at the engineer's desk, whether they involve bridge building, textile designing, or mining procedures. The actual realization or materialization of an assignment, of course, occurs in the field, the factory, or the laboratory at the hands of skilled technicians and aids, the so-called subprofessionals. Women's first entry into the engineering field was as long ago as 1886. Their numbers, however, were few, since by 1940, according to census reports, there were only 730 employed women engineers in the entire United States. Most of these 730 were of subprofessional status, but they did point up the two main considerations in the potential employment of women in an engineering capacity. First, this employment would often be interrupted when women entered into marriage or family life. Second, since the practice of engineering presupposes even yet a man's environment, women engineers must be willing to accept this masculine milieu and work with men. This last, naturally, becomes less of a problem

as more women enter the engineering field.

The great impetus for the woman-engineer movement came with the second World War and the manpower crisis resulting from this conflict. Then for the first time the real temper of women on engineering jobs could be assessed. Employers must have liked what they saw, for by 1950, 6,475 women declared to the census takers that they had full-time employment in some phase of engineering. Of these perhaps 3,600 were actually fully accredited professional engineers: the others were technicians, aids, draftsmen, and the like. These women were only a very small per cent of the 525,000 men employed as engineers in 1950, but only a dyed-in-the-wool Victorian would underestimate their accomplishments, their worth, and their determination.

During the last five years most American engineering schools have acknowledged the trend by accepting, even encouraging women students to participate in engineering courses leading to specializations in household appliances and equipment, textiles, clothing, food, chemistry, mathematics, architecture, and so on. In 1952-53, 52 women obtained engineering degrees from American schools; in 1953-54, 816 women undergraduates were enrolled in 210 different schools. This compares with 170,909 men undergraduates for the same school term. Of the some sixty national engineering organizations in the United States, most now accept women as members. In addition, the ladies also have a professional organization of their very own—the Society of Women Engineers, incorporated in 1952. That women engineers are well received in American industry can no longer be disputed. Many employers at present maintain a non-discriminatory policy in hiring and paying their engineers. This is especially true in the aircraft industry and in concerns dealing with electrical and electronics equipment. Although equity in opportunities for women engineers is not universally practiced, it has been found that when engineering opportunities are good for men, they are almost equally good for women; when they are poor for men, they are still worse for women. By the nature of things, this condition will probably prevail as long as the "dual standard" has any meaning at all.

It has been estimated that the American economy as of now needs 30,000 new engineers each year. Both educators and employers are inclined to look to women as a good potential source of part of this needed engineering manpower.

The honors and the services of Sigma Tau, we submit, can only be enhanced by this opening of our portals to the women who take their place alongside the engineers of America.



Prof. Paul Mann, Rho Chapter Adviser, presents Membership Certificate to Miss Bess Vance.

BESS VANCE

In initiation ceremonies held at the Student Union Building on the University of Idaho campus, Rho Chapter conferred membership upon Miss Bess Louise Vance, another first among the women to be elected to membership in Sigma Tau.

Miss Vance, better known to her friends and classmates as "Louie," is a senior in chemical engineering with her campus home at Forney Hall.

Hailing from Oakland, California, Bess is following in the footsteps of her father, James M. Vance, who studied engineering at Idaho in the twenties. She graduated from Castlemont High School in Oakland in January, 1951, and enrolled at Idaho in September of that year.

Her school years in Moscow have been busy ones for Bess. Between her engineering studies, she has been able to find time for membership in the Women's "I" Club, of which she has been treasurer and vice-president, and on the Women's Recreational Association Board. In addition, Louie is presently scholarship chairman of her dormitory, and has served on such campus-wide committees as the Student Activities Council and the Holly Week Committee. Finally,

Bess was one of sixteen junior girls tapped last spring by Mortar Board, senior women's honorary recognizing outstanding scholarship and activity.

As for hobbies, she hasn't found much time for them here at school, but is interested in photography, mountaineering, and archaeology.

Thus, with key No. 21549, Miss Bess Vance marks the beginning of a new era in the history of Rho Chapter of Sigma Tau—an era undoubtedly destined to witness the ever-increasing prominence of women in engineering.

RUTH PATTERSON

Alpha Beta Initiate, Illumination Expert



(The initiation of the first woman by Alpha Beta Chapter at SMU received nearly a quarter page write-up in the March 1 issue of the Dallas Morning News. Mary Brinkerhoff, staff writer on the News, in her column, "The Woman's Angle," had this to say about Alpha Beta's first woman initiate:

"Miss Ruth Patterson will be honored Friday for throwing light on problems where more than routine illumination is required. An engineering society will give this candle-power expert what local members think is the first alumnae key awarded a woman.

"Sigma Tau honorary didn't accept women when Miss Patterson was working toward her electrical engineering degree at SMU. But Alpha Beta chapter plans to set the record straight.

"During a campus initiation, scheduled to precede a dinner in the Engineers Club, she and a select group of undergraduates will get their keys from C. A. Tatum, Upsilon chapter, Dallas Power and Light Company president and Miss Patterson's boss.

"Unofficially, the whole affair sounds rather like a party in her honor. And well it might be. Although she insists she has done nothing spectacular, Miss Patterson knows of only one other woman

lighting specialist who is also a graduate engineer. Besides a degree, she holds the certificate of a registered professional engineer, which means she has survived a trial period comparable to a doctor's internship.

"Healthy Supply of Common Sense"

"It also demands a smattering of psychology and a healthy supply of common sense. If the customer prefers dark, light-absorbing colors or shiny, light-reflecting finishes, she must allow for these in planning illumination. If he doesn't know how to handle the light that comes in from outside, he must be helped over this hurdle, too.

"Miss Patterson reports that after the initial shock wears off, customers and colleagues never boggle at working with a woman. Nor does she know why any qualified woman shouldn't become an engineer—provided she's willing to do the work.

"Doubtless it helps to inherit mechanical talent. Miss Patterson's father, Stanley Patterson, directs SMU's physical plant and has been there since the school opened. The young lighting expert lives with her parents at 3050 Dyer.

"She has found time and skill for oil painting, china painting, ceramics, woodworking, silversmithing, bowling and church work. She's an active Gamma Phi Beta alumni and Zonta's program chairman. Last Christmas season, she built and lighted a 30-foot red plywood train for a roof decoration.

"Her Job Far From Monotonous"

"The unassuming veteran of four years' work with Prof. David C. Pfeiffer, Upsilon advisor, and consulting engineer; nearly five years on her present job and considerable activity in several engineering societies.

"She has had a big share in planning inside and outside illumination for the Republic National Bank Building and exterior lighting for the Pace-Setter House in Fair Park, cosponsored by the State Fair and House Beautiful magazine. Right now, she is pondering a lighted garden plot for the Dallas Garden Center Flower Show next month.

"The variety fascinates her. 'I seldom do the same thing twice; it's far from monotonous.'

"Miss Patterson and her cohorts in Dallas Power & Light's lighting division work mostly on commercial and industrial projects, but they sometimes help out a private citizen with a tricky illumination problem.

"Light meter and slide rule are only a part of her equipment. The job requires an eye for esthetic values, which adds to its appeal for Miss Patterson."

EDWARD PONT MECHLING

Brigadier General, USAF

Brigadier General, Edward P. Mechling, Upsilon Chapter



Sigma Tau is fortunate in having a long list of members who have achieved notable careers in Science, in Engineering, in Industry, and in the military. Brigadier General Mechling is a candidate for exceptional honors, as during his entire career he has been a member of our military forces. This service has been continuous since his graduation from the United States Military Academy in June 1927, where he received a Bachelor of Science Degree.

Following his graduation from West Point he was detailed to the Ordnance Department and received a Bachelor of Science Degree from the Massachusetts Institute of Technology the same year he graduated from the Army's Ordnance School.

General Mechling's tour of duty at Langley Field extended through 1937-40 when he was assigned as Ordnance Staff Officer of the 8th Air Force in the European Theater of Operations. Later, he was Assistant Chief of Staff A-4, and in late 1944, General Mechling's assignment was with the North African Strategic Air Force where he again served as Assistant Chief of Staff.

On returning to the United States in April 1944, the General was assigned to G-4, War Department General Staff, and served in the following capacities: Chief, Development Section, Program Branch; and Executive Officer. In May 1945, he was assigned as Chief Ordnance Officer, Hq Army Ground Forces. In December of the same year, he was assigned to the National Guard Bureau, and in 1947 was assigned as its Executive Officer, and served in this capacity until December 1948.

His service with the United States Army was terminated in November 1947, and he was transferred to the United States Air Force.

General Mechling served in the Air Staff as Deputy Director